of which *Grammysia Acadica*, Billings, is a well-known species, together with a number of interstratified, more or less, calcareous band-holding branchiopoda, gastropoda, trilobites and ostracods in abundance.

3. THE MOYDART FORMATION (pronounced Mōdiart). This consists for the most part of heavy-bedded, light greenish gray and rusty, or buff-weathering, calcareous strata (in which the 'Red Stratum' of authors occurs) and holds a conspicuous fauna of brachiopods, trilobites, annelids, cephalopods, crinoids, etc. It is followed downward by

4. THE MCADAM FORMATION, which is characterized by dark gray or black fine-grained carbonaceous and oft times splintery shales holding a lamellibranchiate fauna in the upper half of the shale and graptolites in the lower half.

A number of thin lenticular sheets of impure light gray limestone abound in brachiopoda.

5. THE ARISAIG FORMATION. At the base of the Silurian succession, along the Arisaig shore, there occur buff-weathering fine-grained and compact indurated sandstones and shales holding corals (chiefly *Streptelasma*) brachiopods, trilobites, gastropods, etc. These are associated with black carbonaceous and graptolitic shales. The term *Arisaig formation* is suggested and proposed for the lowest Silurian horizon or formation in the section as developed at Beech-hill Cove. The term *Silurian* is here used in the restricted sense as equivalent to the Upper Silurian of Murchison. These formations tabulated would give the following arrangement:

System.	Formation.	Strata.
Devonian.	Knoydart.	Red shales and sandstone, marls and gray sandy shales with tufaceous layers.
Silurian.	Stonehouse.	Red shales and mudstones, with occasional thin bands of limestone.
	Moydart.	Greenish-gray and whitish colored impure limestones.
	McAdam.	Black carbonaceous shales and mudstones.
	Arisaig.	Buff-weathering sandy shales and sandstones, calcareous layers and black carbonaceous shales.

The amount of unconformity, if any, between the Stonehouse and Knoydart formations, *i. e.*, between the Devonian ('Old Red Sandstone') and the Silurian is a point of considerable importance and interest which will receive careful attention. H. M. AMI.

INFLUENCE OF LIGHT ON THE LENGTH OF THE HYPOCOTYL IN INDIAN CORN.

IT is well-known that in vegetating plants of Indian corn, wheat and other cereals, the first node of the stem is found near the surface of the ground, regardless of the depth at which the seed was planted. If the seed is deeply planted, the hypocotyl elongates above the seed proportionally lifting the node almost to the surface. If the seed is planted shallow, on the other hand, the node is found at about the same depth.

That the checking of the elongation of the hypocotyl is due to the influence of light is strikingly shown by an experiment recently conducted in the laboratory of the Wisconsin Agricultural College. Kernels of Indian corn were planted by a number of students in galvanized iron seed pans nearly filled with garden loam, after which the pans were kept covered with close-fitting tin covers until the plantlets began to appear when the covers were removed.

In all plantlets which appeared above the soil before the cover of the seed pan was removed, the first node is above the soil, as is clearly shown by the fact that this node bears the cotyledon, while in those that have since appeared, the first node is just at the surface or below it. E. S. GOFF.

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CURRENT NOTES ON PHYSIOGRAPHY.

ALLEGANY COUNTY, MARYLAND.

THE first volume of a new series of county reports just begun by the Maryland geological survey gives an excellent description of Allegany county, which occupies a central position in the three western mountainous counties. Among nine chapters, treating subjects that range from geology and soils to climate and forests, the physiography of the county is described by C. Abbe, Jr. The three cycles of erosion, characteristic of a great stretch of the

Appalachians, are signalized; the first having witnessed the obliteration of the ancient mountains of deformation in the production of an extensive peneplain; the second, introduced by general uplift, sufficing to produce strips of peneplain on the weaker rocks, but leaving the harder rocks so little worn that their skylines suffice to guide the restoration of the earlier plain; the third, introduced by an uplift of less amount, a relatively brief episode up to to-day, inasmuch as it has permitted only the erosion of narrow valleys in the floor of the weak-rock intermont peneplains. Pauses in the later uplift are indicated by rock terraces on the sides of the young valleys; the recency of the latest uplift is proved by the occurrence of ungraded riffles of hard rock in the beds of the larger streams. The meandering courses of the young valleys in their longitudinal parts are thought to have been inherited from free meanders developed on the open floors of the intermont peneplains, before their upheaval. Several examples of stream adjustment are presented. The report includes many excellent plates; the view of Cumberland and the notch in the even-crested Wills mountains being most characteristic of Allegheny scenery. The report is accompanied by an excellent atlas of six map-sheets; three delicately contoured topographic sheets; and three with an overprint of geologic colors on the topographic base.

The author of the above chapter remarks that the modern method of studying the topography of a district 'seeks, from a study of the outward forms, to discover the reasons for their existence and the processes by which they have been produced. * * * The present physiographic study of Allegany county aims to so present its topography and topographic development as to make clear the reasons why the county has the surface features which characterize it.' A somewhat different wording would have expressed a shade of meaning which is believed to be more appropriate to a physiographic chapter, namely, 'this physiographic study of —— county presents the reasons for the existence of the local topographic forms and the processes by which they have been produced in order that the forms themselves, as they now exist, shall be better known.' The processes of the past are in themselves essentially of a geological nature; they gain a relation to physiography only when they illuminate the facts of the present. Their value to the physiographer lies in the power that they give him to see and to describe the existing facts of topographic form, for physiography is essentially a study of present conditions.

THE PHILIPPINE ISLANDS.

G. F. Becker contributes a 'Brief Memorandum on the Geology of the Philippine Islands' (20th Ann. Rep. U. S. Geol. Surv., pt. ii, 1900, 1–7), which gives another kind of illustration of the point just made regarding the illumination of the present by the past.

Although strictly geological in having to do with past process and time, the essay has a great physiographic value in aiding the imagination to build up a conception of present forms. A strong deformation and uplift of Eocene and older strata was followed by extensive denudation. This was later accompanied by depression, which reduced a large land area to a group of small hilly islets. Volcanic eruptions, making vast additions of material to their denuded and submerged foundation, began during this submergence; then came a general emergence which, with eruptions, has continued ever since; Mayon, one of the most symmetrical cones in the world, having had a violent eruption in 1897. The emergence of the region has revealed coral deposits of the shore waters, which make nearly continuous mantles far up the land slopes, even to altitudes of 2,000 feet. Pauses during uplift allowed the waves to carve sea cliffs and benches, which now take the form of terraces, more or less dissected, as one of the most prominent topographical features of the islands. The last hundred feet of uplift have revealed extensive lowlands, the most valuable part of the archipelago. Considerable areas have been added in deltas, where the mangrove and the nipa palm aid in the deposition of river sediments.

OVERDEEPENED ALPINE VALLEYS.

Kilian, of Grenoble, dissents from the opinion that the overdeepening of glaciated Alpine valleys and the associated discordant mouthing

of the hanging lateral valleys are results of glacial erosion. He concludes that the lateral valleys are the remains of an ancient topography in which the trunk and the branch valleys were accordant; that the lateral valleys, long occupied by névé and ice, have been preserved from erosion, while the trunk valley has been deepened chiefly by stream action during interglacial and postglacial epochs. Overdeepened valleys when thus interpreted are witnesses rather to the conservative action of glaciers than to their destructive action (Note sur le surcreusement ('Uebertiefung') des vallées alpines. C. R. Soc. géol. France. Dec. 17, 1900, 160–162). W. M. DAVIS.

BOTANICAL NOTES.

ELLIOTT'S GRASSES.

THOSE who are fortunate enough to possess a copy of Stephen Elliott's rare two-volume work entitled 'A Sketch of the Botany of South Carolina and Georgia' will be glad to know that Professor Scribner, of the Division of Agrostology of the United States Department of Agriculture, has published a circular (No. 29) giving the results, so far as the grasses are concerned, of a critical examination of Elliott's Herbarium, now in the possession of the College of Charleston, South Carolina. He has been able in this way to verify Elliott's determinations, and to make necessary corrections, the latter due to the fact that in many cases the species had been named previously by foreign botanists, and, also, that many changes in nomenclature have occurred in the eighty or more years which have elapsed since the publication of Elliott's 'sketch.' This herbarium is said to consist of twenty-eight volumes of folios, twelve by twenty-three inches in size, and that part containing the grasses is described as in a 'very good state of preservation.' It is curious that in working over the species, the author (who was assisted by Mr. E. D. Merrill) found it necessary to describe two or more species, viz., *Panicum amaroides* (to be separated from Elliott's *P. amarum*, and hitherto known as *P. amarum minor* Vasey), and *Panicum subbarbulatum* (the *P. barbulatum* of Elliott, but not the *P. barbulatum* of Michaux).

WOOD'S HOLL BOTANY.

THE announcement of the botanical work of the fourteenth season (1901) of the Marine Biological Laboratory, of Wood's Holl, Mass., has just been received. Dr. Bradley Moore Davis, of the University of Chicago, will be in charge again, as he has been for several years past. The session opens July 3d, and extends to August 14th. Work is offered along four lines, viz.: Cryptogamic Botany (algae or fungi, or both); Phanerogamic Botany (the outdoor study of flowering plants; Plant Physiology (experiments and lectures); and Plant Cytology (a laboratory course in methods). Lectures by specialists will be provided as in previous years. A special welcome will be accorded to investigators who desire to carry out special lines of research. Announcements giving further details may be obtained of Dr. Davis.

NEW SPECIES OF NORTH AMERICAN TREES.

IT will surprise many readers to learn that critical botanists have recently discovered many hitherto undescribed species of North American trees. In the January number of the *Botanical Gazette*, Professor C. S. Sargent discusses 'New and Little Known North American Trees,' in which he describes seven new species, viz.: *Gleditsia texana* (a tree one hundred to one hundred and twenty-five feet high, and two and a half feet in diameter, from the valley of the Brazos river, Texas); *Crataegus engelmanni* (fifteen to twenty feet high, and closely related to *C. crus-galli*, from Missouri to Alabama); *Crataegus canbyi* (twenty to twenty-five feet high, also related to *C. crus-galli*, from Delaware); *Crataegus peoriensis* (twenty to twenty-five feet high, from central Illinois); *Crataegus pratensis* (a small tree from central Illinois); *Crataegus submollis* (a large tree hitherto confounded with *C. mollis*, from Maine to Montreal and Massachusetts); *Crataegus dilatata* (a small tree related to *C. coccinea*, from Vermont, Massachusetts and Rhode Island); *Crataegus coccinea rotundifolia* (the *C. rotundifolia* of Moench, one of the commonest of New England forms); and *Crataegus jonesae* (a small tree closely related to *C. coccinea*, from southeastern Maine). Ashe's species, *C. holmesiana*, from Quebec and Ontario to Maine, Massachusetts, New York